# SEARCH REPORT
# EIC-2800

STIC Scientific and Technical Information Center

## STIC Database Tracking Number:

**To: Michael Maskell**
**Location: JEF 4 D49**
**Art Unit: 2881**
**Date: 01-12-09**
**Case Serial Number: 10/599572**

**From: Samir Patel**
**Location: EIC2800**
**JEF 04-A-70**
**Phone: (571) 272-23537**
**Samir.patel@uspto.gov**

## Search Notes

Dear Examiner:

Please find attached the results of your search for the above-referenced case. The search was conducted in Google, Dialog Foreign Patent abstracted databases (Jpo, Chinese patents, Derwent), Dialog NPL Files.

I have listed *potential* items of interest in the first part of the search results. The Search Histories are included at the end of this file.

If you have any questions about the search, or need a refocus, please do not hesitate to contact me.

Thank you for using the EIC, and we look forward to your next search!

Samir Patel

***Note: EIC-Searcher identified "potential items of interest" are selected based upon their apparent relevance to the terms/concepts provided in the examiner's search request.***

**I. Potential items of Interest from multiple databases**

28/3,K/6 (Item 5 from file: 350)
DIALOG(R)File 350: Derwent WPIX


0006656939 *Drawing available*
WPI Acc no: 1994-034813/199404
XRAM Acc no: C1994-016051
XRPX Acc No: N1994-027117
**Time of flight direct recoil ion scattering spectrometer - adjusts pulse interval w.r.t. ion beam mass and energy to maximise repetition rate**
Patent Assignee: ARCH DEV CORP (ARCH-N)
Inventor: GRUEN D M; KRAUSS A R; LAMICH G J

Patent Family ( 2 patents, 19 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| WO 1994001206 | A1 | 19940120 | WO 1993US6343 | A | 19930702 | 199404 | B |
| US 5347126 | A | 19940913 | US 1992908282 | A | 19920702 | 199436 | E |

Priority Applications (no., kind, date): US 1992908282 A 19920702

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes |
|---|---|---|---|---|---|
| WO 1994001206 | A1 | EN | 160 | 17 | |
| National Designated States,Original | CA JP | | | | |
| Regional Designated States,Original | AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE | | | | |
| US 5347126 | A | EN | 27 | 17 | |

**Time of flight direct recoil ion scattering spectrometer... ...adjusts pulse interval w.r.t. ion beam mass and energy to maximise repetition rate Original Titles:Time**-of-**flight** direct recoil ion scattering spectrometer... ...**TIME**-OF-**FLIGHT** DIRECT RECOIL ION SCATTERING SPECTROMETER **Alerting Abstract** ...A **time** of **flight** direct recoil ion scattering spectrometer comprises an ion beam generator and a **pulser** (14,16) to dynamically **adjust** the **pulse interval** in accordance with the combination of ion beam mass and energy to maximise repetition rate consistent with resolved data sepn.. There is a detector for... ...Also claimed is a method of performing **time** of **flight** direct recoil scattering spectrometry... **Equivalent Alerting Abstract** ...**Time**-of-**flight** direct recoil ion scattering spectrophotometer uses a paraxial **pulsed** ion bean, the **interval** between each **pulse** being dynamically **adjusted** in accordance with the combination of ion beam mass and energy to maximise repetition rate consistent with revolved data sepn.. The beam is pulsed by **Technology Focus** Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts:A time** of **flight** direct **recoil** and **ion** scattering spectrometer beam line (10). The beam line (10) includes an ion source (12) which injects ions into pulse deflection regions (14) and (16) separated by a drift space (18). A final optics stage includes an ion lens and deflection plate assembly (22). The **ion pulse** length and **pulse interval are** determined **by computerized adjustment** of the timing **between** the voltage **pulses** applied to the pulsed deflection regions (14) and (16... ... A **time**-of-**flight** direct recoil ion scattering spectrometer (10) **is** comprised **of** a device (12) for producing a beam of ions and a device (14, 16) for pulsing said beam of ions. The device (12) and the pulsed device (14, 16) is operative to dynamically **adjust** the **interval** between successive beam **pulses** in accordance **with** the **combination** of **ion** beam **mass** and energy to maximize repetition rate consistent with resolved data separation. An ion beam emitted from a sample (24) is detected after the sample is... **Claims:**A **time**-of-**flight** direct **recoil** ion scattering spectrometer, comprising: means for producing a paraxial beam of ions; means for pulsing said beam of ions, said pulsing means operative to dynamically **adjust** the **interval** between **successive** beam **pulses** in **accordance** with the combination of ion beam mass and energy to maximize repetition rate consistent with resolved data separation, said means for pulsing comprising a plurality...

47/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350: Derwent WPIX
0013464533 *Drawing available*
WPI Acc no: 2003-556064/200352
XRPX Acc No: N2003-441710

**Mass spectrometer for chemical analysis, has control unit for switching ion gate of electrode between two modes and causes electrode to inject or accelerate ions having mass charge ratio at required mass to drift region**

Patent Assignee: BATEMAN R H (BATE-I); GREEN M (GREE-I); MICROMASS LTD (MICR-N); MICROMASS UK LTD (MICR-N)

Inventor: BATEMAN R H; **GREEN M**; BATEMAN R

Patent Family ( 10 patents, 32 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| US 20030075678 | A1 | 20030424 | US 2002411822 | P | 20020919 | 200352 | B |
| | | | US 2002274988 | A | 20021022 | | |
| CA 2409346 | A1 | 20030422 | CA 2409346 | A | 20021022 | 200352 | E |
| EP 1306881 | A2 | 20030502 | EP 2002257332 | A | 20021022 | 200352 | E |
| GB 2388955 | A | 20031126 | GB 200224594 | A | 20021022 | 200378 | E |
| GB 2388955 | B | 20040901 | GB 200224594 | A | 20021022 | 200457 | E |
| US 7095015 | B2 | 20060822 | US 2002274988 | A | 20021022 | 200656 | E |
| CA 2409346 | C | 20070109 | CA 2409346 | A | 20021022 | 200707 | E |
| EP 1772895 | A1 | 20070411 | EP 2002257332 | A | 20021022 | 200726 | E |
| | | | EP 200626560 | A | 20021022 | | |
| EP 1306881 | B1 | 20081001 | EP 2002257332 | A | 20021022 | 200866 | E |
| | | | EP 200626560 | A | 20061221 | | |
| DE 60229100 | E | 20081113 | DE 60229100 | A | 20021022 | 200877 | E |
| | | | EP 2002257332 | A | 20021022 | | |

Priority Applications (no., kind, date): GB 200125241 A 20011022; GB 200127662 A 20011119; GB 200221502 A 20020917; US 2002274988 A 20021022

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes | |
|---|---|---|---|---|---|---|
| US 20030075678 | A1 | EN | 31 | 16 | Related to Provisional | US 2002411822 |
| CA 2409346 | A1 | EN | | | | |
| EP 1306881 | A2 | EN | | | | |
| Regional Designated States,Original | AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR | | | | | |
| CA 2409346 | C | EN | | | | |
| EP 1772895 | A1 | EN | | | Division of application | EP 2002257332 |
| | | | | | Division of patent | EP 1306881 |
| Regional Designated States,Original | AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR | | | | | |
| EP 1306881 | B1 | EN | | | Related to application | EP 200626560 |
| | | | | | Related to patent | EP 1772895 |
| Regional Designated | AT BE BG CH CY CZ DE DK EE ES FI FR GR IE IT LI LU MC NL PT SE SK TR | | | | | |

| States,Original | | | | | | |
|---|---|---|---|---|---|---|
| DE 60229100 | E | DE | | | Application | EP 2002257332 |
| | | | | | Based on OPI patent | EP 1306881 |

**Mass spectrometer for chemical analysis, has control unit for switching ion gate of electrode between two modes and causes electrode to inject or accelerate ions having mass charge ratio at required mass to drift region ...Original Titles:Mass spectrometer Spectrometre de masse ... ...Mass spectrometer Spectrometre de masse ... ...Mass spectrometer Spectrometre de masse Mass spectrometer Mass spectrometer Mass spectrometer ...Inventor: GREEN M Alerting Abstract** ... mass analyzer with an electrode for orthogonally accelerating ions between an ion detector (7) and a drift region (5). A control unit switches an ion **gate** (2) between two modes. The unit switches the **gate** to a mode at a time T1 and the electrodes inject or accelerate ions to a drift region at a time T1 +deltaT1. The deltaT1... DESCRIPTION - The mode of the control unit has lower **ion transmission** efficiency. The deltaT1 is set such that ions having mass to charge ratio at value M1. An INDEPENDENT CLAIM is also included for a method for **mass spectrometry**. ... ...DESCRIPTION OF DRAWINGS - The drawing shows a **mass spectrometer**. ... ...2 Ion **gate Title Terms** .../Index Terms/Additional Words: **GATE**; **Class Codes** Original Publication Data by AuthorityArgentina**Publication No.** Inventor name & address:**GREEN M**... ...**GREEN M**... ...**GREEN M**... ...**Green, Martin**... ...**Green, Martin**... ...**Green, Martin**... ...**GREEN M**... ...**GREEN M**... ...**Green, Martin**... ...**Green, Martin Original Abstracts:** A **mass spectrometer** is disclosed wherein the pusher electrode 4 of a **Time** of **Flight** mass analyser is operated in conjunction with an ion **gate** 2 to ensure that low mass background or matrix ions are not injected into the drift region 5 of the mass analyser... ... A **mass spectrometer** is disclosed wherein the pusher electrode 4 of a **Time** of **Flight** mass analyser is operated in conjunction with an ion **gate** 2 to ensure that low mass background or matrix ions are not injected into the drift region 5 of the mass analyser... ... A **mass spectrometer** is disclosed wherein the pusher electrode of a **Time** of **Flight** mass analyser is operated in conjunction with an ion **gate** to ensure that low mass background or matrix ions are not injected into the drift region of the mass analyser... ... A **mass spectrometer** is disclosed wherein the pusher electrode of a **Time** of **Flight** mass analyser is operated in conjunction with an ion **gate** to ensure that low mass background or matrix ions are not injected into the drift region of the mass analyser. **Claims:** A **mass spectrometer** comprising: an ion source; an orthogonal acceleration **Time** of **Flight** mass analyser comprising an electrode for orthogonally accelerating ions, an ion detector and a drift region therebetween; an ion **gate** upstream of said electrode; and control means for switching said ion **gate** between a first mode and a second mode, said second mode having a lower **ion transmission** efficiency than said first mode, wherein in a mode of operation said control means: (i) switches said ion **gate** from said first mode to said second mode at a time T1; and (ii) causes said electrode to inject or orthogonally accelerate ions into said.... ... hierzwischen, wobei das maximale Masse-Ladungs-Verhaltnis von Ionen, die zum Analysieren durch den Massenanalysator (2) eingerichtet bzw. bereitgestellt werden, Mmax ist; einem Ionengatter bzw. -**gate** (2) stromaufwarts der Elektrode (4), wobei die Distanz von dem Ionengatter (2) zu der Elektrode (4) L1 ist, die Lange der Elektrode (4) L2 ist... ... A **mass spectrometer** comprising: an ion source (1); an orthogonal acceleration **Time** of **Flight** mass analyser (3) comprising an electrode (4) for orthogonally accelerating ions, a reflectron (6), an ion detector (7) and a drift region (5) therebetween, wherein the maximum mass to charge ratio of ions arranged to be analysed by said mass analyser (3) is Mmax; an ion **gate** (2) upstream of said electrode (4), wherein the distance from said ion **gate** (2) to said electrode (4) is L1, the length of said electrode (4) is L2 and the distance from said electrode (4) to said ion detector (7) is L3; and control means for switching said ion **gate** (2) between a first mode and a second mode, said second mode having a lower **ion transmission** efficiency than said first mode, wherein in a mode of operation said control means: (i) switches said ion **gate** (2) from said first mode to said second mode at a time T1; and (ii) causes said electrode (4) to inject or orthogonally accelerate ions... ... orthogonally accelerated into said drift region (5) by said electrode (4); wherein, in use, a continuous ion beam is arranged to arrive at said ion **gate** (2); **characterised in that**: said ion source (1) comprises an Electron Impact ion source or a Chemical Ionisation ion source; said distance L1 is not greater than said distance L3; said control means is arranged to set said ion **gate** (2) in said first mode for the majority of a cycle Tc so as to **transmit ions** and to switch said **ion gate** (2) to said second mode for a relatively ... between a value M1' and Mmax are substantially injected or orthogonally accelerated into said drift region (5) by said electrode (4) with a first relative **transmission** efficiency of 100% and **ions** having a mass to charge ratio in the range M1-M1' are substantially injected or orthogonally accelerated into said drift region (5) by said electrode... ... **Spectrometre de masse** comprenant: une source d'ions (1); un analyseur de masse a temps de vol a acceleration orthogonale (3) comprenant une electrode (4) pour accelerer orthogonalement... ... valeur M1' et Mmax sont sensiblement injectes ou acceleres orthogonalement dans ladite region de derive (5) par ladite electrode (4) avec une premiere efficacite de **transmission** relative de 100% et des **ions** ayant un rapport masse/charge dans la gamme M1-M1' sont sensiblement injectes ou acceleres orthogonalement dans ladite region de derive (5) par ladite electrode... ... A **mass spectrometer** comprising: an ion source;an orthogonal acceleration **Time** of **Flight** mass analyser comprising an electrode

for orthogonally accelerating ions, an ion detector and a drift region therebetween;an ion **gate** upstream of said electrode; andcontrol means for switching said ion **gate** between a first mode and a second mode, said second mode having a lower **ion transmission** efficiency than said first mode, wherein in a mode of operation said control means: (i) switches said ion **gate** from said second mode to said first mode at a time T2; and(ii) causes said electrode to inject or orthogonally accelerate ions into said... ... 1. A **mass spectrometer** comprising: an ion source; an orthogonal acceleration **Time of Flight** mass analyser comprising an electrode for orthogonally accelerating ions, an ion detector and a drift region therebetween; an ion **gate** upstream of said electrode; and control means for switching said ion **gate** between a first mode and a second mode, said second mode having a lower **ion transmission** efficiency than said first mode, wherein in a mode of operation said control means: (i) switches said ion **gate** from said first mode to said second mode at a time T1; and (ii) causes ... What is claimed is:47. A method of **mass spectrometry**, comprising: switching an ion **gate** from a first mode to a second mode at a tune T1, said second mode having a lower **ion transmission** efficiency than said first mode; andinjecting or orthogonally accelerating ions into a drift region of an orthogonal acceleration **Time** of **Flight** mass analyser at a later time T1+DeltaT1;wherein DeltaT1 is set such that ions having a mass to charge ratio >= a value M1 are

44/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350: Derwent WPIX


0014525619 *Drawing available*
WPI Acc no: 2004-707569/200469
Related WPI Acc No: 2005-099353
XRAM Acc no: C2004-249518
XRPX Acc No: N2004-560909
**Analysis of ion beam from sample, comprises detecting accelerated ions at detector, in which ions of sequential packets are intermingled at detector, and characterizing sample with intermingled detected ions of sequential packets**
Patent Assignee: BIOSPECT INC (BIOS-N); PREDICANT BIOSCIENCES INC (PRED-N)
Inventor: BELOV M; FANCHER C A; FOLEY P

Patent Family ( 2 patents, 1 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| US 20040183007 | A1 | 20040923 | US 2003395023 | A | 20030321 | 200469 | B |
| US 6900431 | B2 | 20050531 | US 2003395023 | A | 20030321 | 200536 | E |

Priority Applications (no., kind, date): US 2003395023 A 20030321

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes |
|---|---|---|---|---|---|
| US 20040183007 | A1 | EN | 20 | 7 | |

**Original Titles:**MULTIPLEXED ORTHOGONAL **TIME**-OF-**FLIGHT MASS SPECTROMETER** ... ...Multiplexed orthogonal **time**-of-**flight mass spectrometer Alerting Abstract** ... DESCRIPTION OF DRAWINGS - The drawing schematically illustrates an orthogonal axis Hadamard transform **time**-of-**flight mass spectrometer** system.**Technology Focus** INSTRUMENTATION AND TESTING - Preferred Method: The **periods** of the sequence comprise **different** accumulation **periods**, and the characterizing step comprises recovering a spectrum of the sample from the intermingled ions using the **different** accumulation **periods**. The packets have **different** ion quantities accumulated during the **different periods**, where the detector generates a signal in response to the intermingled ions, where the accumulating and extracting of the ions modulate the signal in part in response to the different quantities, and the spectrum recovering step comprises reconstruction of a **mass spectrum** from the signal based at least in part on the different quantities of ions. The sequence of **different periods** comprises a pseudo random sequence. The characterizing step comprises applying an inverse matrix corresponding to a simplex matrix of the sequence with values modified in... **Extension Abstract** Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts:**A **mass spectrometer** and associated **methods analyze** an ion beam by accumulating ions for a sequence of time periods, and driving the **accumulated ions** in **pulses**. Differing **quantities** of **ions** can be accumulated **in** the sequential **pulses** according to a pseudo-random sequence, and the slower ions are overtaken by the faster ions of a subsequent pulse. A **mass spectrum** may be **reconstructed from** an overlapping ion detector signal using an inverse of a weighted simplex matrix or inverse Hadamard transform techniques... ... A **mass spectrometer** and associated methods analyze an ion beam **by accumulating** ions for a sequence of time **periods**, and driving **the** accumulated **ions** in **pulses**. Differing **quantities** of **ions** can be accumulated in the sequential pulses according to a pseudo-random sequence, and the slower ions are overtaken by the faster ions of a subsequent pulse. A **mass spectrum** may be reconstructed from an overlapping ion **detector signal** using an inverse of a weighted simplex matrix or inverse Hadamard transform techniques....

31/3,K/25 (Item 19 from file: 350)
DIALOG(R)File 350: Derwent WPIX


0009239834
WPI Acc no: 1999-166880/199914
Related WPI Acc No: 1998-427368
XRAM Acc no: C1999-048691
XRPX Acc No: N1999-121592

**Determination of molecular masses of large bio-molecules - by using a neutron pulse generator to produce fission fragments which cause the desorption of ions from the bio-material so their time of flight to a detector can be measured.**

Patent Assignee: US DEPT ENERGY (USAT)
Inventor: BROWNING J F; FRIES D P

Patent Family ( 1 patents, 1 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| US 5872824 | A | 19990216 | US 1994312907 | A | 19940930 | 199914 | B |
| | | | US 1995438210 | A | 19950509 | | |
| | | | US 1996693507 | A | 19960808 | | |

Priority Applications (no., kind, date): US 1994312907 A 19940930; US 1995438210 A 19950509; US 1996693507 A 19960808

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes | |
|---|---|---|---|---|---|---|
| US 5872824 | A | EN | 9 | 3 | Division of application | US 1994312907 |
| | | | | | Continuation of application | US 1995438210 |

...**by using a neutron pulse generator to produce fission fragments which cause the desorption of ions from the bio-**

**material so their time of flight to a detector can be measured. Original Titles:**Method for studying a sample of material using a heavy ion induced **mass spectrometer** source. **Alerting Abstract** ...ADVANTAGE - Molecular masses greater than 25,000 amu and up to 100,000 can be measured. The time zero mark for **time** of **flight** analysis can be derived from the electronics used to drive the neutron generator. The generated fission fragments can be synchronized so background noise from previously... **Documentation Abstract** ...ADVANTAGE - Molecular masses greater than 25,000 amu and up to 100,000 can be measured. The time zero mark for **time** of **flight** analysis can be derived from the electronics used to drive the neutron generator. The generated fission fragments can be synchronized so background noise from previously... ... PREFERRED METHOD - The neutron pulse generator is part of a heavy ion induced desorption **mass spectrometer** source. The fissionable material used is 238U. The repetition rate of the neutron **pulse** generator can **be adjusted**. The **pulses emitted** by **the** generator are correlated with the ion desorptions. The neutron pulses are between 5 and 100 nanoseconds in duration and each causes the emission of about... **Documentation Abstract Image** Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts: A** heavy ion generator is used with a plasma desorption **mass spectrometer** to provide **an appropriate** neutron flux in the direction of a fissionable material in order to desorb and ionize large molecules from the material for mass analysis. The heavy... ... material. These heavy ions impinge on a material, thereby causing ions to desorb off that material. The ions desorbed off the material pass through a **time**-of-**flight** mass **analyzer**, wherein **ions** can be measured with masses greater than 25,000 amu. ...**Claims:**denotes a time instant when said one or more neutron pulses are generated; e) recording a stop time for each of said at least one **ion** desorbed off **said** sample of material, wherein said **stop** time denotes **a** time instant when said at least one **ion desorbed** off said sample of material arrives at a detector located at an end of said drift region, said detector being positioned at a third

31/3,K/23 (Item 17 from file: 350)
DIALOG(R)File 350: Derwent WPIX


0009852551 *Drawing available*
WPI Acc no: 2000-146567/200013
XRAM Acc no: C2000-045807
XRPX Acc No: N2000-108501
**Time-of-flight mass spectrometer with two variable reflectrons for multiple-pass operation**
Patent Assignee: UNIV NORTHERN IOWA (UYNI-N)
Inventor: HANSON C D

Patent Family ( 1 patents, 1 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| US 6013913 | A | 20000111 | US 199819650 | A | 19980206 | 200013 | B |

Priority Applications (no., kind, date): US 199819650 A 19980206

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes |
|---|---|---|---|---|---|
| US 6013913 | A | EN | 20 | 13 | |

**Time-of-flight mass spectrometer with two variable reflectrons for multiple-pass operation Original Titles:**Multi-pass reflectron **time**-of-**flight mass spectrometer**. **Alerting Abstract** ...least one electrode (9) in the detector region either to a third power supply (17) or to earth. The switches may be independently set to **change** at user-defined time **intervals** after a packet of ions has been accelerated by the electrodes in the source region... ...USE - For **time**-of-**flight mass spectrometry**. ... ...ADVANTAGE - Gives multiple ion passes, for improved performance. Gives enhanced resolution and sensitivity and selectivity, with high **ion transmission**. System is cheaper than current instruments of comparable performance Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts:**A novel design for a **time**-of-**flight mass spectrometer** capable of tandem **mass spectrometry** measurements with high resolution and high sensitivity using two variable reflectrons in a co-linear geometry. Variably switched reflectrons are oriented coaxially on opposing ends of the ion flight region allowing multiple passes of the ions along the flight region permitting high resolution, tandem **mass spectrometry** experiments to be performed. An electrostatic particle guide is incorporated to ensure high **ion transmission** efficiency in a multi-pass system. In addition to permitting the high **transmission** efficiency of **ions**, the EPG can be used in a bipolar pulsed mode to isolate ions of interest for structural study. **Claims:**A **time**-of-**flight mass spectrometer**, **comprisinga** sealed housing containing a source region, an ion flight region, and a detector region,a vacuum pump for maintaining a vacuum within the housing,a...

**Dialog eLink:** Order File History
31/3,K/17 (Item 11 from file: 350)
DIALOG(R)File 350: Derwent WPIX


0012328372 *Drawing available*
WPI Acc no: 2002-270289/200232
XRAM Acc no: C2002-080311
XRPX Acc No: N2002-210314
**Process for detecting compounds in a gas stream comprises irradiating the gas stream in the ionization chamber of a mass spectrometer with a UV laser impulse alternating with a vacuum-UV laser impulse, and detecting the ions produced**
Patent Assignee: BOESL U (BOES-I); GSF FORSCHUNGSZENTRUM UMWELT & GESUNDHEI (GSFU-N); GSF-FORSCHUNGSZENTRUM UMWELT & GESUNDHEI (GSFU-N); HAFNER K (HAFN-I); HEGER J (HEGE-I); KETTRUP A (KETT-I); MUHLBERGER F (MUHL-I); ZIMMERMANN R (ZIMM-I); HELMHOLTZ ZENT MUENCHEN DEUT FORSCHUNGSZ (HELM-N)
Inventor: BOESL U; BOESL VON GRAFENSTEIN U; HAFNER K; HEGER H J; HEGER J; KETTRUP A; MUEHLBERGER F; MUHLBERGER F; ZIMMERMANN R

Patent Family ( 10 patents, 23 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| DE 10014847 | A1 | 20011004 | DE 10014847 | A | 20000324 | 200232 | B |
| WO 2001073816 | A1 | 20011004 | WO 2001EP848 | A | 20010126 | 200232 | E |
| EP 1266396 | A1 | 20021218 | EP 2001962408 | A | 20010126 | 200301 | E |
| | | | WO 2001EP848 | A | 20010126 | | |
| US 20030020014 | A1 | 20030130 | WO 2001EP848 | A | 20010126 | 200311 | E |
| | | | US 2002243536 | A | 20020914 | | |
| JP 2004502136 | W | 20040122 | JP 2001571447 | A | 20010126 | 200411 | E |
| | | | WO 2001EP848 | A | 20010126 | | |
| US 6727499 | B2 | 20040427 | WO 2001EP848 | A | 20010126 | 200429 | E |
| | | | US 2002243536 | A | 20020914 | | |
| JP 3764680 | B2 | 20060412 | JP 2001571447 | A | 20010126 | 200626 | E |
| | | | WO 2001EP848 | A | 20010126 | | |
| EP 1266396 | B1 | 20080416 | EP 2001962408 | A | 20010126 | 200831 | E |
| | | | WO 2001EP848 | A | 20010126 | | |
| DE 50113862 | G | 20080529 | DE 50113862 | A | 20010126 | 200838 | E |
| | | | EP 2001962408 | A | 20010126 | | |
| | | | WO 2001EP848 | A | 20010126 | | |
| ES 2304392 | T3 | 20081016 | EP 2001962408 | A | 20010126 | 200914 | E |

Priority Applications (no., kind, date): DE 10014847 A 20000324

| Regional Designated States,Original | AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR |
|---|---|
| EP 1266396 | AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR |
| Regional Designated States,Original | AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR |
| National Designated States,Original | CA JP US |

Patent Number | Kind | Dtn | Pgs | Draw | PCT Application | Filing Note
DE 10014847 | A1 | DE | 8 | 3 | Based on OPI patent | WO 2001073816
C-I-P of application | WO 2001EP848

| | | | | | | |
|---|---|---|---|---|---|---|
| JP 2004502136 | W | JA | 34 | | PCT Application | WO 2001EP848 |
| | | | | | Based on OPI patent | WO 2001073816 |
| US 6727499 | B2 | EN | | | C-I-P of application | WO 2001EP848 |
| JP 3764680 | B2 | JA | 9 | | PCT Application | WO 2001EP848 |
| | | | | | Previously issued patent | JP 2004502136 |
| | | | | | Based on OPI patent | WO 2001073816 |
| EP 1266396 | B1 | DE | | | PCT Application | WO 2001EP848 |
| | | | | | Based on OPI patent | WO 2001073816 |
| Regional Designated States,Original | AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR | | | | | |
| DE 50113862 | G | DE | | | Application | EP 2001962408 |
| | | | | | PCT Application | WO 2001EP848 |
| | | | | | Based on OPI patent | EP 1266396 |
| | | | | | Based on OPI patent | WO 2001073816 |
| ES 2304392 | T3 | ES | | | Application | EP 2001962408 |
| | | | | | Based on OPI patent | EP 1266396 |

**Process for detecting compounds in a gas stream comprises irradiating the gas stream in the ionization chamber of a mass spectrometer with a UV laser impulse alternating with a vacuum-UV laser impulse, and detecting the ions produced**
**Alerting Abstract** ...NOVELTY - Process for detecting compounds in a gas stream comprises introducing the gas stream with the compounds into the ionization chamber (14) of a **mass spectrometer**; irradiating the gas stream with a UV laser **impulse** (10) **alternating** with a vacuum-UV (VUV) laser impulse (2); and detecting the ions produced. ...DESCRIPTION OF DRAWINGS - The drawing shows a schematic view of the ionization region of a **mass spectrometer** and the gas cell... Original Publication Data by AuthorityArgentina**Publication No.** ...O**riginal Abstracts:**of compounds in the analysis gas to be characterised almost simultaneously. The gas stream containing the compounds is guided into the ionisation chamber of a **mass spectrometer** and exposed to radiation with a UV laser pulse. The resulting ions are detected in the **mass spectrometer**. The gas stream is exposed to said radiation with said UV laser pulses at regular or irregular **intervals** by **alternate** exposure to a vacuum ultraviolet (VUV) laser pulse in the ionisation chamber, the resulting ions being detected in the **mass spectrometer**. ... ... apparatus for detecting compounds in a gas stream, the gas stream with the compounds to be detected is conducted into an ionization chamber of a **mass spectrometer** where the gas stream is subjected in the ion chamber in a **pulsed** manner **alternately** to UV laser **pulses** and to vacuum ultraviolet VUV laser pulses and the **ions** generated thereby are **directed** into the **mass spectrometer** for detection therein to determine the compounds in the gas stream... ... apparatus for detecting compounds in a gas stream, the gas stream with the compounds to be detected is conducted into an ionization chamber of a **mass spectrometer** where the gas stream is subjected in the ion chamber in a **pulsed** manner **alternately** to UV laser **pulses** and to vacuum ultraviolet VUV laser pulses and the **ions** generated thereby are **directed** into the **mass spectrometer** for detection therein to determine the compounds in the gas stream... ... of compounds in the analysis gas to be characterised almost simultaneously. The gas stream containing the compounds is guided into the ionisation chamber of a **mass spectrometer** and exposed to radiation with a UV laser pulse. The resulting ions are detected in the **mass spectrometer**. The gas stream is exposed to said radiation with said UV laser pulses at regular or irregular **intervals** by **alternate** exposure to a vacuum ultraviolet (VUV) laser pulse in the ionisation chamber, the resulting ions being detected in the **mass spectrometer**. ... ... simultanement, une pluralite de composes dans un gaz d'analyse. L.e courant gazeux renfermant les composes est dirige dans la chambre d'ionisation d'un **spectrometre** de **masse**, et irradie par impulsions laser UV, les ions prenant ainsi naissance etant detectes dans le **spectrometre** de **masse**; en alternance au rayonnement a impulsions laser UV, le courant gazeux est irradie, a intervalles reguliers ou irreguliers, dans la chambre d'ionisation, par impulsions laser en ultraviolet sous vide (VUV), et les ions prenant alors naissance sont detectes dans le **spectrometre** de **masse**. ...**Claims:**detection of compounds in a gas flow, in which a) the gas flow with the compounds is passed into the ionization chamber (14) of a **mass spectrometer**,b) the gas flow is irradiated by an UV laser pulse (10) in the ionization chamber (14), andc) the resulting ions are detected in the **mass spectrometer**, **characterized by**d) the gas flow in the ionization chamber being irradiated by a vacuum ultraviolet (VUV) laser pulse (2) at regular or irregular **intervals alternately** with irradiation by UV laser **pulses** (10) and the thus generated ions being detected in the **mass spectrometer**.... ... composes dans une veine gazeuse selon lequel a- on fait passer la veine gazeuse avec les composes dans la chambre d'ionisation (14) d'un **spectrometre** de **masse**,b- on irradie la veine gazeuse

dans la chambre d'ionisation (14) avec une impulsion laser UV (10) etc- on detecte les ions ainsi formes dans le **spectrometre** de **masse**, **caracterise en ce qued**- en alternance a l'irradiation par des impulsions laser UV (10) a des intervalles reguliers ou irreguliers, on irradie la... ... de gaz dans la chambre d'ionisation avec une impulsion laser UV sous vide (VUV) (2) et on identifie les ions ainsi formes dans le **spectrometre** de **masse**.... ... A) Introduceltransducing gas flow which has compound into ionization space (14) of **mass spectrometer**,B) Irradiating ultraviolet (UV) laser pulse (10) at gas flow in ionization space (14),C) In the method of carrying out online detection of several compounds in gas flow by detecting ion produced in that case with **mass spectrometer**,D) Between UV laser pulses following measurement and it of ion produced by UV laser pulse, setting vacuum-ultraviolet (VUV) laser pulse (2) to gas flow of ionization space, and irradiating regular or irregular time interval to it at it,The ion produced in that case is detected with a **mass spectrometer**,E) Analyzing separately ion produced according to each kind of radiation,Method to carry out the online detection of several compounds in a gas flow... ... What is claimed is: **1**. Method for detecting compounds in a gas stream by a **mass spectrometer** including an ionization chamber, said method comprising the steps of: a) conducting the gas stream with the compounds into the ionization chamber of the **mass spectrometer**, b) irradiating the gas stream in the ionization chamber by an UV-laser pulse and c) detecting the ions generated thereby in the **mass spectrometer**, and d) alternately exposing the gas stream is in the ionization chamber in a uniform or non-uniform spacing to a vacuum ultraviolet (VUV) laser pulse for the irradiation with UV-laser pulses and detecting the ions generated thereby in the **mass spectrometer.**

31/3,K/10 (Item 4 from file: 350)
DIALOG(R)File 350: Derwent WPIX


0013733741 *Drawing available*
WPI Acc no: 2003-831864/200377
Related WPI Acc No: 1999-394667; 2001-456337; 2002-225241; 2002-253215; 2003-787165
XRPX Acc No: N2003-664819
**Contamination level determination method for surface layer of semiconductor wafer, involves sputtering portion of surface layer to uniform depth, by varying ion beam strength and scanning speed introduced to wafer**
Patent Assignee: MARSH E P (MARS-I); MICRON TECHNOLOGY INC (MICR-N)
Inventor: MARSH E P

Patent Family ( 2 patents, 1 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| US 20030193023 | A1 | 20031016 | US 199835197 | A | 19980305 | 200377 | B |
| | | | US 1999309208 | A | 19990510 | | |
| | | | US 2001795999 | A | 20010228 | | |
| | | | US 2003358939 | A | 20030204 | | |
| | | | US 2003440587 | A | 20030519 | | |
| US 6713760 | B2 | 20040330 | US 2003440587 | A | 20030519 | 200423 | E |

Priority Applications (no., kind, date): US 199835197 A 19980305; US 1999309208 A 19990510; US 2001795999 A 20010228; US 2003358939 A 20030204; US 2003440587 A 20030519

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes | |
|---|---|---|---|---|---|---|
| US 20030193023 | A1 | EN | 15 | 8 | Continuation of application | US 199835197 |
| | | | | | Continuation of application | US 1999309208 |
| | | | | | Continuation of application | US 2001795999 |
| | | | | | Continuation of application | US 2003358939 |
| | | | | | Continuation of patent | US 5920068 |
| | | | | | Continuation of patent | US 6232600 |
| | | | | | Continuation of patent | US 6528786 |

**Original Titles:**ANALYSIS OF SEMICONDUCTOR SURFACES BY SECONDARY ION **MASS SPECTROMETRY** AND METHODS... ...Analysis of semiconductor surfaces by secondary ion **mass spectrometry** and methods **Alerting Abstract** ...DESCRIPTION OF DRAWINGS - The figure shows the front diagrammatic view of **mass spectrometer**. ... ...10secondary ion **mass spectrometer** analysis system Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts:**A method for a **mass spectrometric** determination of **contaminant components** of a thin oxide surface layer of a semiconductor wafer use a movable mechanical stage to scan and raster a large area of the wafer... ... A method for a **mass spectrometric** determination of contaminant components of a **thin oxide surface** layer of a semiconductor wafer use a movable mechanical stage to scan and raster a large area of the wafer in a continuous scanning motion... ...**Claims:**a depth Q at asputtering rate in mass per unit time controlled by varying a primary ion beam strengthand the depth controlled by **varying** a scanning speed **in length** per unit **time**.... ... oxide layer to a depth not generally exceeding a depth Q at a sputtering rate in mass per unit time controlled by varying a primary **ion beam** strength and a depth controlled by **varying** a scanning speed in **length** per unit **time.>**

48/9/11 (Item 2 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)


0013737479 **E.I. COMPENDEX No:** 1997013302748
**Rare earth oxide equilibria in pulsed direct current glow discharge mass spectrometry**

Mei, Yuan; Harrison, W.W.
**Corresp. Author/Affil:** Mei, Yuan: Univ of Florida, Gainesville, United States
Analytical Chemistry ( Anal Chem ) 1996 68/13 (2135-2140)
**Publication Date:** 19961201
**Publisher:** ACS
**CODEN:** ANCHA **ISSN:** 0003-2700
**Item Identifier (DOI):** 10.1021/ac960019d
**Document Type:** Article; Journal **Record Type:** Abstract
**Treatment:** A; (Applications); X; (Experimental)
**Language:** English **Summary Language:** English
**Number of References:** 15
Glow discharge **mass spectrometry** is used to examine the equilibria existing between La SUP + and LaO SUP +. A pulsed discharge permitted temporal comparison of spectra taken at **varying intervals** after discharge initiation. Post discharge peaks are observed for both atom and oxide **ions**. By **varying** the **pulse period** while sustaining a fixed `on' time, the degree of deposition of gaseous constituents on the cathode surface can be controlled. Injection of normal water and isotopically labeled water for compacted and noncompacted samples allows insight into the source of water signals.
**Descriptors:** Glow discharges; Lanthanum compounds; **Mass spectrometry**; Oxides; *Rare earth compounds
**Identifiers:** Equilibria; Glow discharge **mass spectrometry**; Pulsed direct currents
**Classification Codes:**
801.1 (Chemistry, General)
804.2 (Inorganic Compounds)
932.1 (High Energy Physics)
941.4 (Optical Variables Measurements)

37/9/42 (Item 1 from file: 144)
DIALOG(R)File 144: Pascal

16576818 PASCAL No.: 04-0225678

Alternative approaches to infrared multiphoton dissociation in an external ion reservoir : Ion Activation in Chemistry and Biochemistry: Mechanisms, Dynamics, and Applications

HOFSTADLER Steven A; DRADER Jared J; GAUS Hans; HANNIS James C ; SANNES-LOWERY Kristin A
Ibis Therapeutics, a Division of Isis Pharmaceuticals, Carlsbad, California, United States
2003 Sanibel Meeting
Journal: Journal of the American Society for Mass Spectrometry, 2003, 14 (12) 1413-1423
ISSN: 1044-0305 Availability: INIST-22160; 354000119010150080
No. of Refs.: 20 ref.
Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)
Country of Publication: United States
Language: English
In this work we present variations on in-hexapole infrared multiphoton dissociation (IRMPD) for the characterization of modified oligonucleotides using an ESI-FTICR spectrometer. We demonstrate that IRMPD in the external ion reservoir provides a comprehensive series of fragments allowing thorough characterization of a wide range of oligonucleotides containing alternative backbones and 2' substitutions. An **alternative pulse** sequence is presented that allows **alternating** MS and IRMPD MS/MS spectra to be acquired on a chromatographic timescale without loss in ionization duty cycle. Ions are excited to a larger cyclotron radius such that they "dodge" the IR laser beam that travels through the center of the trapped ion cell and impinges on the external ion reservoir creating IRMPD fragments that will be detected in the next scan. An alternative approach for **directing** IR radiation into the external **ion** reservoir using a hollow fiber waveguide as a photon conduit is presented. This approach offers a simple and robust alternative to the previously utilized on-axis scheme and may allow effective implementation with lower power lasers owing to the inherent increase in power density achieved by focusing the nascent laser beam into the hollow fiber waveguide.

English Descriptors: Photodissociation; Infrared radiation; Multiphoton process; **Mass spectrometry** MS/MS; Ion cyclotron resonance spectrometry; Fourier transformation; Electrospray; Oligonucleotide; Fragmentation pattern; Analysis method

French Descriptors: Photodissociation; Rayonnement IR; Processus n photons; **Spectrometrie masse** tandem; **Spectrometrie** cyclotronique ionique; Transformation Fourier; Electrospray; Oligonucleotide; Schema fragmentation; Methode analyse

Classification Codes: 002A02C01; 001C03B03

37/9/14 (Item 2 from file: 23)
DIALOG(R)File 23: CSA Technology Research Database


0008874500 IP Accession No: 200804-71-443078; 200804-61-470436; 2008427469; A08-99-457243
**Mass spectrometer**

Hashimoto, Yuichiro; Baba, Takashi; Hasegawa, Hideki; Waki, Izumi
, USA
**Publisher Url:** http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u =/netaht ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=73 29862.PN.&OS=pn/7329862& RS=PN/7329862

**Document Type:** Patent
**Record Type:** Abstract
**Language:** English
**File Segment:** Metadex; Mechanical & Transportation Engineering Abstracts; ANTE: Abstracts in New Technologies and Engineering; Aerospace & High Technology

**Abstract:**
A **mass spectrometer** capable of analyzing a wide mass range with high sensitivity and high **mass** accuracy. A **mass spectrometer** has an ionization source generating **ions**; an **ion transfer** optics transferring the **ions**; a first linear trap accumulating the ions and ejecting the ions in the specific mass range; a second linear trap having an end electrode disposed at the exit end ejecting the ions to change a DC potential gradient relative to a DC potential of the end electrode and trapping the ions ejected from the first linear trap to repeatedly eject them in pulse form; a **time**-of- **flight mass spectrometer** accelerating the ions ejected from the second linear trap in the orthogonal direction to detect them; and a controller **changing** the time **duration** of the ions in which the ions are ejected from the second linear trap or delay time from the completion of ejection to application of an accelerating voltage of the **time**-of-**flight mass spectrometer** according to the **mass** range of the ions ejected from the first linear trap to the second linear trap.

**Descriptors:** Ejection; **Mass spectrometers**; Electrodes; Direct current; Voltage; Delay; Electric potential; Ionization; Trapping; Potential gradients
**Subj Catg:** 71, General and Nonclassified; 61, Design Principles; 99, General

8/3,K/5 (Item 1 from file: 350)
DIALOG(R)File 350: Derwent WPIX


0016883194 *Drawing available*
WPI Acc no: 2007-598258/200757
Related WPI Acc No: 2007-556250
XRAM Acc no: C2007-214878
XRPX Acc No: N2007-463338
**Dynamically controlling a time period of ion detection for scanning mass spectrometer, by statistically monitoring an output signal from detector of mass spectrometer, and terminating the time period for the ion detection**
Patent Assignee: FOOTE J D (FOOT-I); PREST H F (PRES-I); AGILENT TECHNOLOGIES INC (AGIL)
Inventor: FOOTE J D; PREST H F

Patent Family ( 4 patents, 3 countries )

| Patent Number | Kind | Date | Application Number | Kind | Date | Update | Type |
|---|---|---|---|---|---|---|---|
| US 20070114374 | A1 | 20070524 | US 2005254337 | A | 20051020 | 200757 | B |
| | | | US 2006375184 | A | 20060314 | | |
| JP 2007248467 | A | 20070927 | JP 200764293 | A | 20070314 | 200765 | E |
| CN 101038273 | A | 20070919 | CN 200710079458 | A | 20070312 | 200810 | E |
| US 7482580 | B2 | 20090127 | US 2005254337 | A | 20051020 | 200908 | E |
| | | | US 2006375184 | A | 20060314 | | |

Priority Applications (no., kind, date): US 2005254337 A 20051020; US 2006375184 A 20060314

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes |
|---|---|---|---|---|---|
| US 20070114374 | A1 | EN | 11 | 4 | C-I-P of application US 2005254337 |
| JP 2007248467 | A | JA | 18 | | |
| US 7482580 | B2 | EN | | | C-I-P of application US 2005254337 |

**Dynamically controlling a time period of ion detection for scanning mass spectrometer, by statistically monitoring an output signal from detector of mass spectrometer, and terminating the time period for the ion detection** ...**Original Titles:**METHOD AND SYSTEM FOR **DYNAMICALLY ADJUSTING ION** -MONITORING **PERIOD Alerting Abstract** ...NOVELTY - Dynamically controlling a time period of ion detection comprises statistically monitoring an output signal from a detector of the **mass spectrometer** during single ion detection; and terminating the time period for the ion detection upon calculation of a statistically valid accumulation statistic or calculation indicating that ... ... a system for scanning **mass spectrometer**, comprising an ion detector, a scanning or single ion monitoring spectrometer, and a controller; and a computer readable medium carrying instructions for dynamically controlling a time period of ion detection by a scanning **mass spectrometer**. ... ... USE - For dynamically controlling a time period of

ion detection for a scanning **mass spectrometer**.... ... ADVANTAGE - The method can dynamically control a time period of ion detection by an ion detector of a **mass spectrometer** during selected ion monitoring or scan... ... DESCRIPTION OF DRAWINGS - The figure is a block diagram of a scanning **mass spectrometry** system.Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts:**The invention claims method, system and machine-readable medium for dynamically controlling time quantum of ion detecting. The ion is detected by ion detector of **mass spectrograph**. Current result is able to be measured during the process of detecting ion by detector. The current result is transformed from the outcome of detector... ... Methods, systems and computer readable media for dynamically controlling a time period of ion detection by an ion detector of a **mass spectrometer**. A current resulting from conversion of an output of the detector is surveyed during the ion detection by the detector. The time period for the... ... Methods, systems and computer readable media for dynamically controlling a time period of ion detection by an ion detector of a **mass spectrometer**. A current resulting from conversion of an output of the detector is surveyed during the ion detection by the detector. The time period for the... **Claims:**[CLAIM 1] A method using for dynamically controlling time quantum of ion detecting by scanning **mass spectrograph**, said method comprises following steps: in the period of detecting single m/z ion, statistically inspecting outcoming signal from detector of the said **mass spectrograph**; and stopping the said time quantum the calculation of accumulated statistic information that is effective for statistics and calculation of statistic information that indicates the... ...CLAIM 10] A method for dynamically controlling time quantum of ion detecting by scanning **mass spectrograph**, said method comprises following steps: at the period of detecting single m/z ion, receiving reading from ion detector of the said **mass spectrograph**; adding the said reading to accumulated value; statistically inspecting said accumulated value; stopping the said time quantum the calculation of accumulated statistic information that is... CLAIM 20] A system used in scanning **mass spectrograph**, the system comprises: ion detector; scanning or single ion inspecting **mass spectrograph** for selectively guiding the ion, which has selected quality and charge, to the said ion detector; and controller for selectively accumulating and statistically inspecting the said command sequence is used for dynamically controlling time quantum of ion detecting by scanning **mass spectrograph**, wherein, using one of more than one processor to execute one or more than one command sequence, the execution follows the following steps: receiving reading from ion detector of the said **mass spectrograph**; adding the said reading in accumulated value; statistically inspecting the said accumulated value; according to following execution to stop the time quantum of ion detecting... ... That which is claimed is:**1**. A method of dynamically controlling a time period of ion detection for a scanning **mass spectrometer**, said method comprising the steps of:statistically monitoring an output signal from a detector of the **mass spectrometer** during single m/z ion detection; andterminating the time period for the ion detection upon calculation of a statistically valid accumulation statistic or calculation... ... That which is claimed is: 20. A system for use in a scanning **mass spectrometer**, the system comprising: an ion detector; a scanning or single ion monitoring spectrometer to selectively direct ions of a selected mass and charge to the...

**II. Search Historics of multiple Databases**

File 2:INSPEC 1898-2009/Dec W2
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S2 740 (MARK(2N)SPACE?? OR MARKSPACE??)(5N)(RATIO?? OR PROPORTION?? OR QUOTIENT?? OR FACTOR??)
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S20 2 RD (unique items)
S21 18 S9 AND S12 AND S1
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S25 99 S1 AND S9 AND (S15 OR S4 OR S14 OR S5)
S26 66 RD (unique items)
S27 2 S26 AND GATE?
S28 74 S1 AND S10 AND (S15 OR S4 OR S14 OR S5)
S29 2 S28 AND GATE?
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S31 3 S1 AND S2
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S47 12 S46 NOT PY>2004
S48 12 S47 NOT S43
S49 234 S13 AND (S1 OR S33)
S50 1 S49 AND S3

File 344:Chinese Patents Abs Jan 1985-2006/Jan
(c) 2006 European Patent Office
File 347:JAPIO Dec 1976-2009/Sep(Updated 091230)
(c) 2010 JPO & JAPIO
File 350:Derwent WPIX 1963-2009/UD=201002
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Set Items Description
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S3 615623 GATE??
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S10 76878 (DIFFERENT??? OR SEPARAT???? OR DIFFERENTIAT????? OR DISTINCT?? OR DISTINGUISH????)(5N)S8

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S13 1014 AU=(GREEN M? OR GREEN, M? OR WILDGOOSE J? OR WILDGOOSE, J? OR PRINGLE S? OR PRINGLE, S? OR GILES K? OR GILES, K?)

S14 1915 S3(5N)S6
S15 1952 S3(5N)S7
S16 0 (S15 OR S4) AND (S14 OR S5) AND S1 AND S2 AND (S9 OR S10) AND S11 AND S12
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S18 1 (S15 OR S4) AND (S14 OR S5) AND S1 AND (S9 OR S10) AND S12
S19 13 (S15 OR S4) AND (S14 OR S5) AND S1 AND (S9 OR S10)

S20 12 S19 NOT S18
S21 7 S20 NOT AD=20040521:20100111/PR
S22 101 (S15 OR S4 OR S14 OR S5) AND S1 AND (S9 OR S10)
S23 11 S22 AND GATE?
S24 8 S23 NOT (S21 OR S18)
S25 2 S24 NOT AD=20040521:20100111/PR
S26 13 S9 AND S12 AND S1
S27 12 S26 NOT (S21 OR S18 OR S25)
S28 7 S27 NOT AD=20040521:20100111/PR
S29 66 S1 AND S9 AND (S15 OR S4 OR S14 OR S5)
S30 59 S29 NOT (S21 OR S18 OR S25 OR S28)
S31 41 S30 NOT AD=20040521:20100111/PR
S32 43 S1 AND S10 AND (S15 OR S4 OR S14 OR S5)
S33 9 S32 AND GATE?
S34 0 S33 NOT (S21 OR S18 OR S25 OR S28 OR S32)
S35 23484 MASS(2N)SPECTR?
S36 26376 S35 OR S1
S37 13 S36 AND S9 AND S12
S38 5 S37 NOT (S21 OR S18 OR S25 OR S28)
S39 0 S38 NOT AD=20040521:20100111/PR
S40 2 S9 AND (S6 OR S7) AND (S35 OR S1) AND S3
S41 3 (S14 OR S15) AND (S9 OR S10) AND (S33 OR S1)
S42 34 S12 AND (S1 OR S35)
S43 16 S42 AND (S9 OR S10)
S44 1 S43 NOT (S21 OR S18 OR S25 OR S28 OR S32 OR S38)
S45 57 S13 AND (S1 OR S35) AND (S14 OR S15 OR S4 OR S5)
S46 9 S45 AND S3
S47 1 S46 NOT AD=20040521:20100111/PR